

1,160,669



# PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: FREDERICK BALL

1,160,669

Date of Application and filing Complete Specification: 4 July, 1968.

No. 32007/68.

Complete Specification Published: 6 Aug., 1969.

Index at acceptance: —E2 AD5D; A5 K2

International Classification: —F 16 b 21/00

## COMPLETE SPECIFICATION

### Improvements in or relating Detent Devices

We, FERRARIS DEVELOPMENT AND ENGINEERING COMPANY LIMITED, a British Company, of 26 Lea Valley Trading Estate, Angel Road, Edmonton London N.18., do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to detent devices for retaining longitudinally slidable members against movement in one direction, and has for its object to provide a simple detent device which is readily releasable to allow the 15 slidable member to move in the direction against which movement is normally prevented by the detent device.

According to the present invention, a detent 20 device for retaining a longitudinally slidable member against movement in one direction comprises a mounting member adapted to be fixed to a boss or like tubular member through which the slidable member passes, a resilient 25 arm projecting outwardly from said mounting member and a detent finger carried by said radial arm to engage the slidable member, the resilience of the radial arm serving to urge the detent finger into engagement with the 30 slidable member, and pressure exerted on the radial arm in a direction parallel to the direction of movement of the slidable member serving to disengage the detent finger from the 35 slidable member.

One embodiment of the present invention 35 will now be described with reference to the accompanying drawings which show the detent device applied to a peak flow meter for determining the maximum flow of air which a person can produce when exhaling air. This 40 is, of course, only one example of the use of the invention.

[Price 4s. 6d.]

In the drawings:—

Figure 1 is a sectional elevation of the peak flow meter showing the detent device mounted therein;

Figure 2 is a view in elevation of the detent device shown in Figure 1, the device being shown on a larger scale and is viewed from the right in Figure 1; and

Figure 3 is a sectional elevation of the detent device on the line 3—3 of Figure 2.

Referring to the drawings, and more particularly to Figure 1 thereof, the peak flow meter comprises a generally cylindrical body 10 having a mouthpiece 11, of smaller diameter than the body, at one end, the other end of the body being closed by a cap 12 having central tubular bosses 13 and 14 projecting from its inner and outer sides respectively. The bores of the bosses 13 and 14 provide a guide for a tubular piston rod 15 carrying a piston 16 slidable in the body 10 and urged towards the mouthpiece 11 by a tension spring 17 extending through the tubular rod 15, the spring being anchored at one end to a plug 18 closing the outer end of the said tubular rod and at its other end to a diametral rod 19 carried by a ring 21 mounted in the mouthpiece. A longitudinal slot 22 is formed in the body, and an index 23 fixed to the piston slides along the said slot, co-operating with scale markings on the body at one side of the slot.

The tubular piston rod 15 is provided with a longitudinal series of projections or indentations 24 conveniently providing ratchet teeth. A detent device to co-operate with the ratchet, generally indicated by the reference numeral 25, comprises a clip portion consisting of two arcuate arms 26 to embrace the boss 13 and a limb 27 extending radially outwardly from the junction of said arms, a detent finger 28 having an inclined inner end 29 being fixed

45

50

55

65

70

75

80

to said radial limb 27. A button 31 is also fixed to said radial limb 27 so as to project in a direction parallel to the axis of the clip. The component comprising the arms 26 and radial limb 27 is made of spring metal, and the detent finger 28 is preferably made of the same material.

The boss 13 is slotted at one side as shown at 32 in Figure 1, and the clip arms 26 are so positioned on it that the detent finger 28 projects into the slot 32 to engage the ratchet teeth 24. The clip is secured to the boss by screws, rivets or the like passing through holes 33 in the arms 26. The button 31 projects through a hole 34 formed in the end cap 12.

The resilience of the radial limb 27 urges the detent finger 28 into engagement with the teeth 24, but the said finger can be moved clear of the teeth by pressing on the button 31 and thus bending the radial limb 27.

When a person blows into the mouthpiece 11, the air entering the body 10 displaces the piston 16 away from the mouth piece end of the body, tensioning the spring 17, and the detent finger 28 rides idly over the ratchet teeth 24. As soon as the persons breath begins to wane, the piston tends to return under the spring load, but is immediately held against such return movement by the engagement of the detent finger 28 with the ratchet teeth 24, thus holding the piston at its maximum displacement and enabling its position to be read on the scale. To prepare the peak flow meter for a further test, all that is necessary is to press the button 31 inwardly to release the detent finger from the ratchet teeth, allowing the piston to return to its initial position.

It will be observed that the detent device according to the invention is simple in construction and does not include any pivoted components, so that its operation is not likely to be disturbed by collection of foreign matter, so that reliable operation may be expected without continuous cleaning. This is particularly advantageous in the use of the detent device specifically described herein, where the device is exposed to fouling by human mucus and saliva.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1969.  
Published by the Patent Office, 25, Southampton Buildings, London, W.C.2. from which copies may be obtained.

WHAT WE CLAIM IS:—

1. A detent device for retaining a longitudinally slideable member against movement in one direction comprising a mounting member adapted to be fixed to a boss or like tubular member through which the slideable member passes, a resilient arm projecting outwardly from said mounting member and a detent finger carried by said radial arm to engage the slideable member, the resilience of the radial arm serving to urge the detent finger into engagement with the slideable member, and pressure exerted on the radial arm in a direction parallel to the direction of movement of the slideable member serving to disengage the detent finger from the slideable member.

2. A detent device according to Claim 1, wherein the mounting member comprises a pair of arcuate arms formed integral with the resilient outwardly projecting arm, the said arcuate arms being adapted to embrace the boss or like tubular member and to be fixed thereto by screws, rivets or like fixing members.

3. A detent device according to Claim 2, wherein the boss or like tubular member is slotted for the passage of the detent finger.

4. A detent device according to Claim 1, 2 or 3, wherein the longitudinally slideable member is provided with ratchet teeth to co-operate with the detent finger.

5. A detent device according to any preceding Claim, wherein a button is mounted on the radial limb to receive the pressure for bending the radial limb to release the detent finger.

6. A detent device for retaining a longitudinally slideable member against movement in one direction, substantially as described with reference to, and as shown in, the accompanying drawing.

For the Applicants:  
F. J. CLEVELAND & COMPANY  
Chartered Patent Agents,  
Lincoln's Inn Chambers,  
40—43 Chancery Lane,  
London W.C.2.

Fig.1.

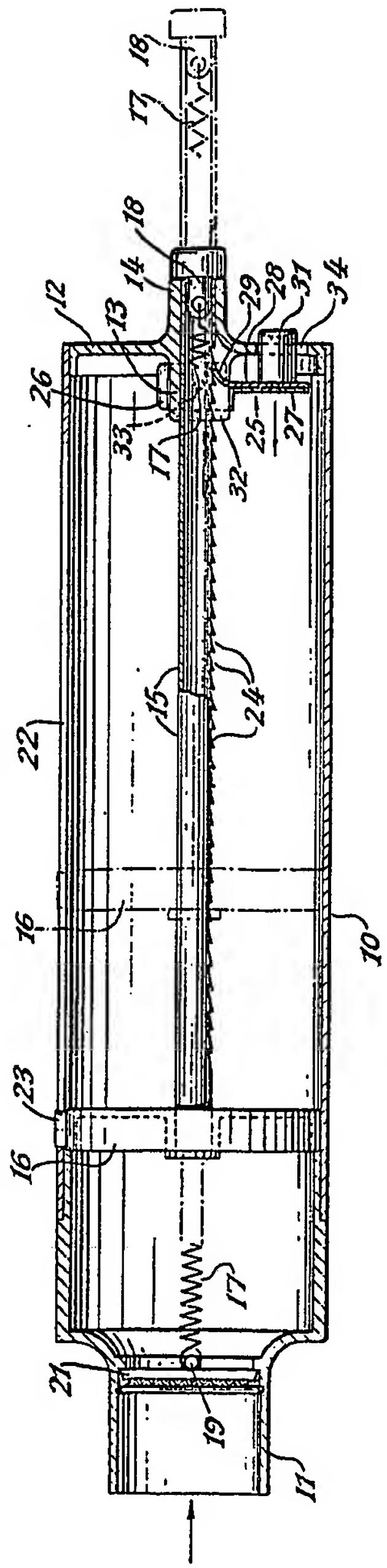


Fig.2

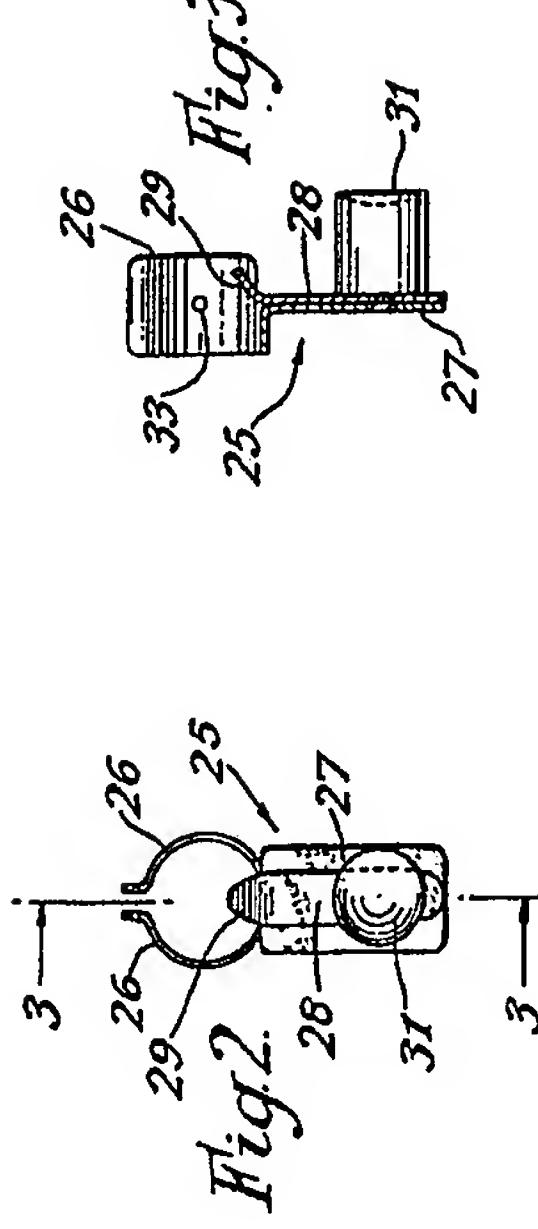


Fig.3

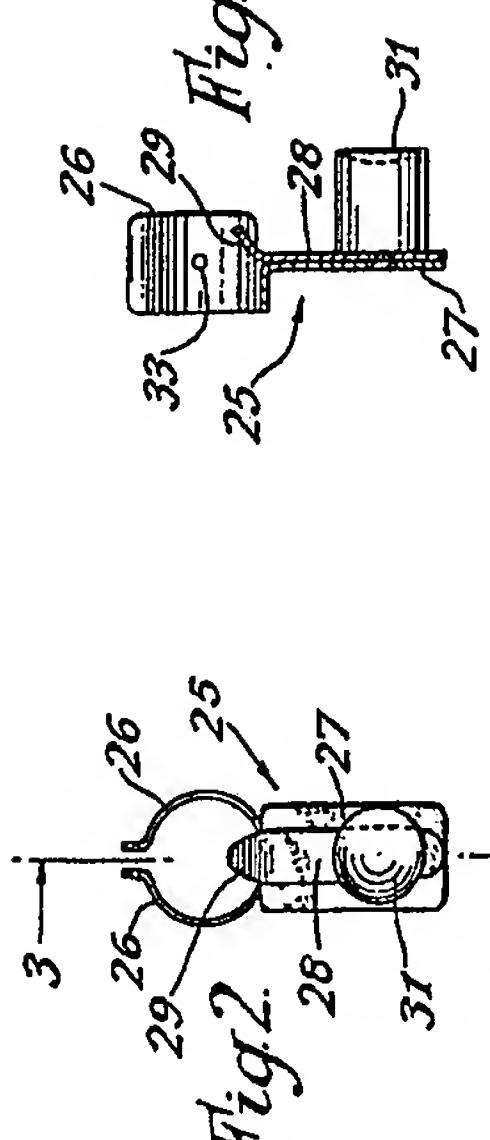
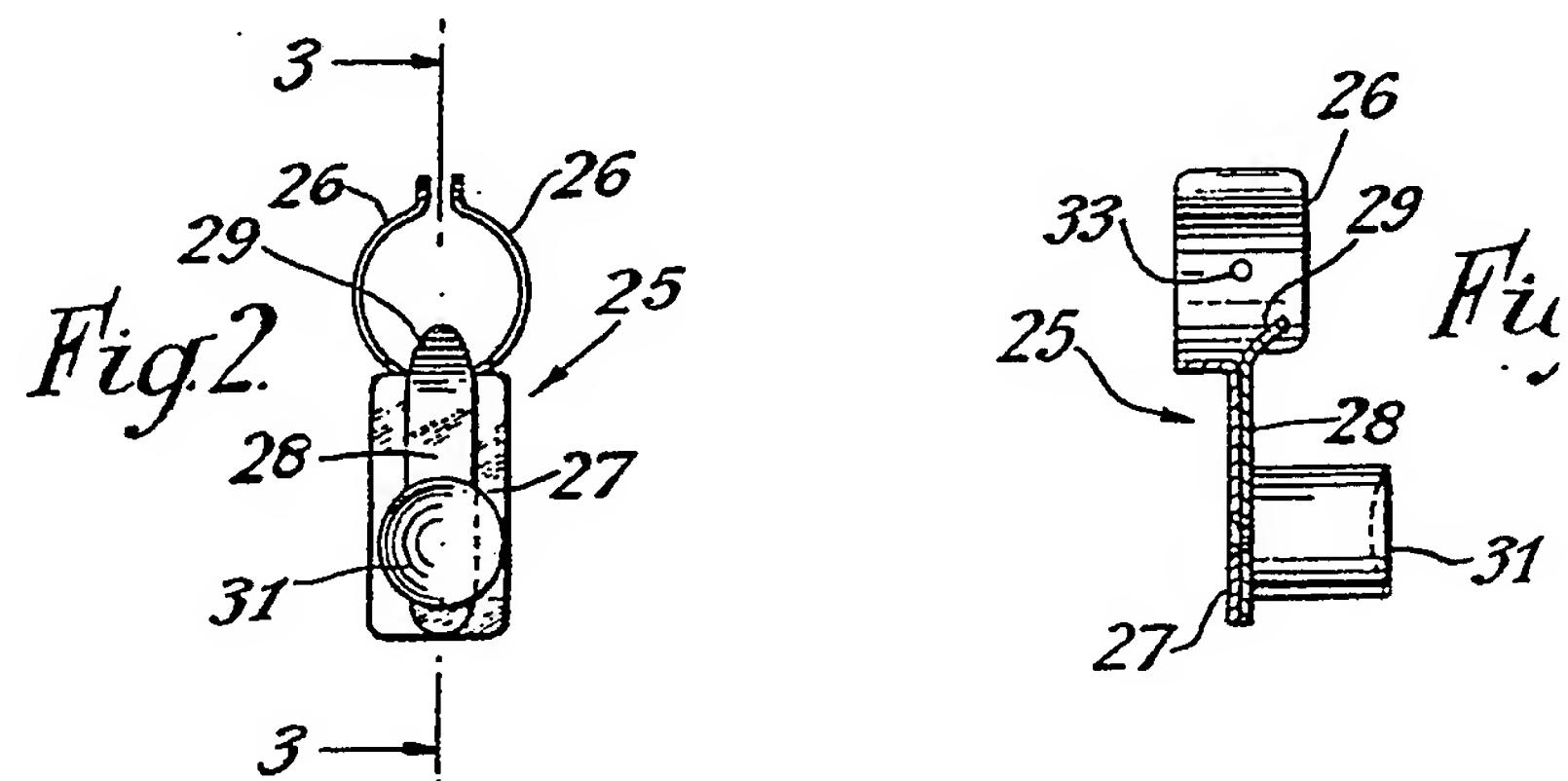
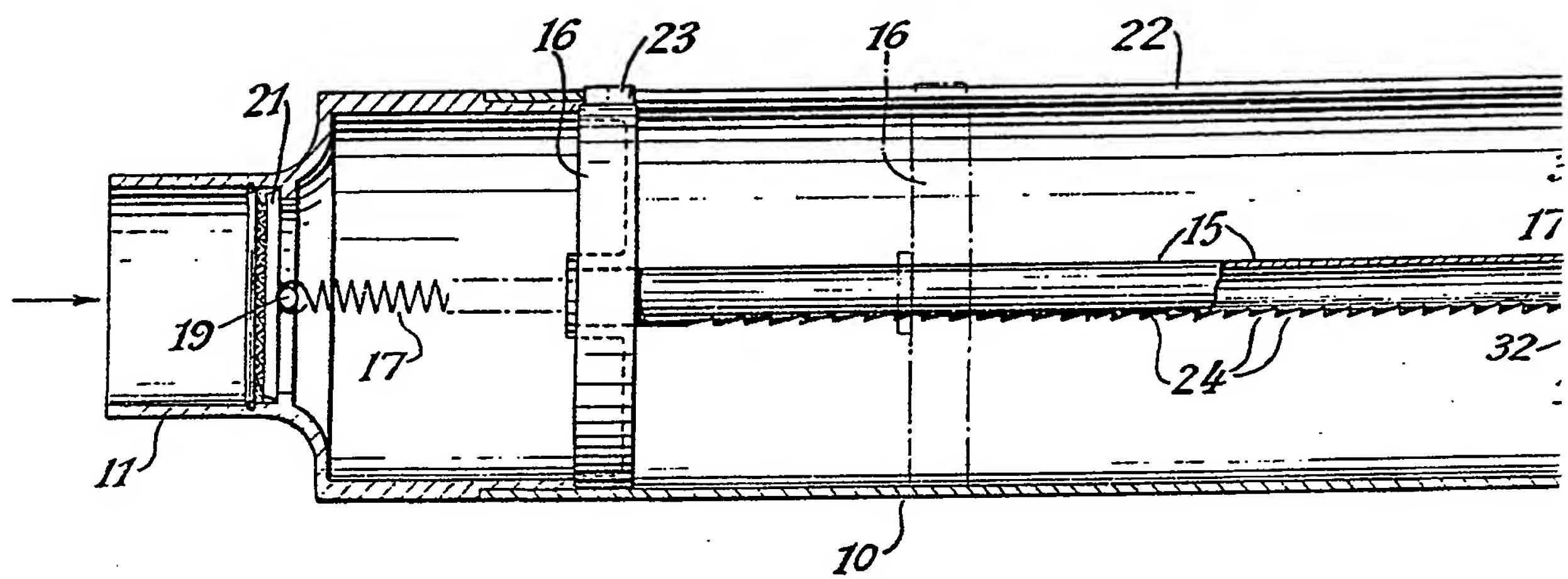


Fig.1.



BEST AVAILABLE COPY

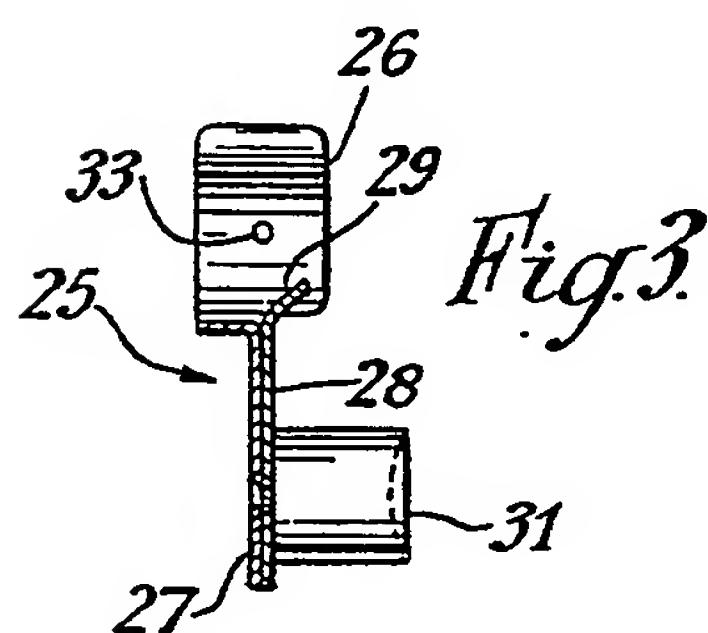
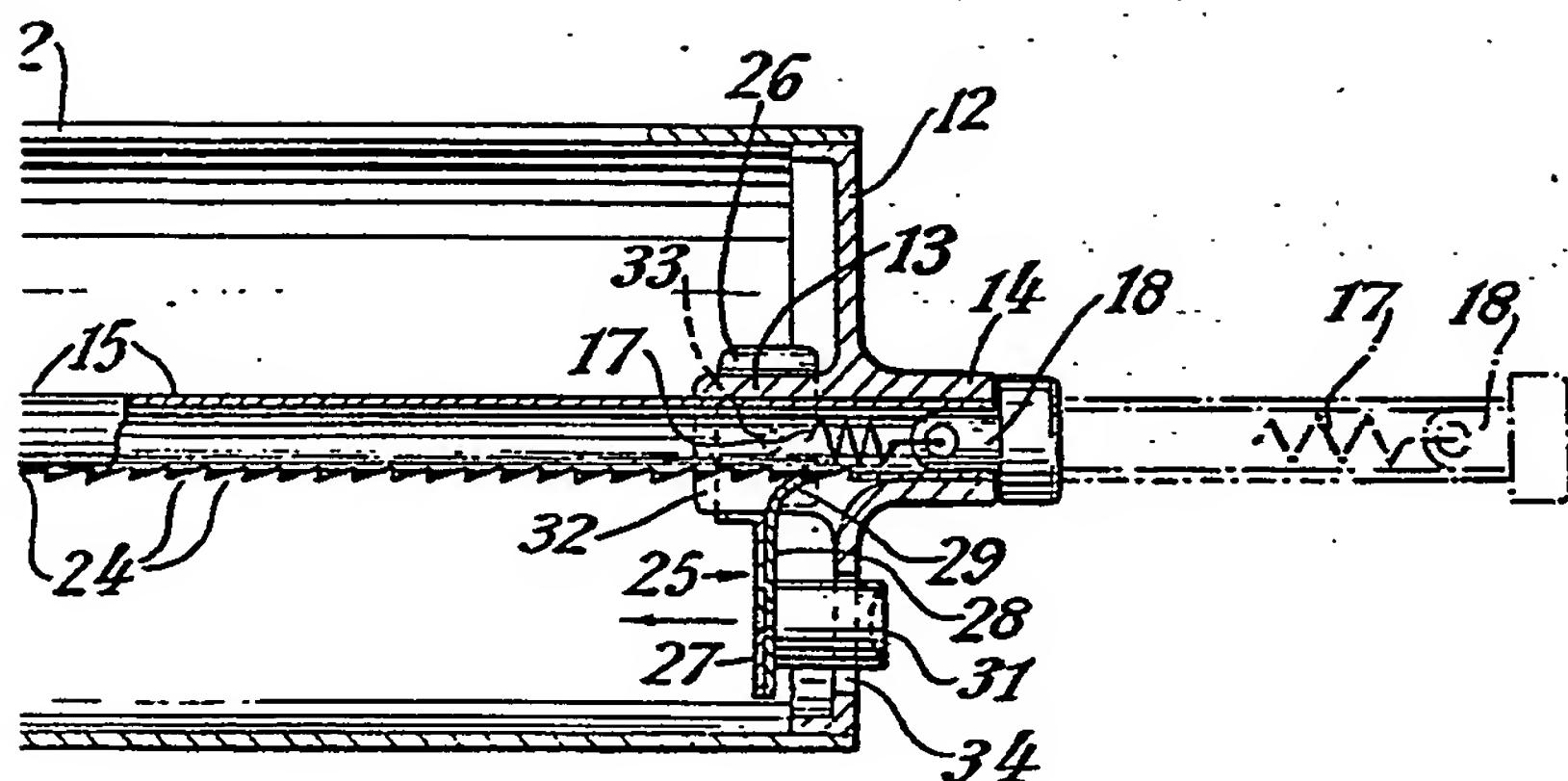
1160669

COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of  
the Original on a reduced scale

Fig. 1



BEST AVAILABLE COPY